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(54) Endocardial mapping and ablation system and catheter probe and method.

(57) Endocardial mapping and/or ablation system (21) for introduction into a chamber of the heart formed by a wall, by passage through a lumen leading to the chamber in the heart having blood therein, comprising a catheter probe (22) with proximal and distal extremities (37, 38) and having an elongate tubular member (36) with at least one lumen (39) extending therethrough extending the length thereof and with a distal extremity. A plurality of longitudinally and radially spaced apart electrodes (67, 68) are provided. An expandable device (46) is secured to the distal extremity of the flexible elongate tubular member and is movable between a contracted position and an expanded position. The electrodes (67, 68) are mounted on the expandable device (46) whereby when the expandable device (46) is moved to the expanded position in a chamber of the heart the electrodes (67, 68) are moved into engagement with the wall forming the chamber of the heart in which the expandable device (46) is disposed. An elongate element is coupled to the expandable device for moving the expandable device between the contracted and expanded positions. The expandable device (46) has spaces therein through which the blood can flow when the expandable device (46) is in an expanded position. Leads (71) are in contact with the electrodes (67, 68) and extending through the flexible elongate tubular member (36). Electrical apparatus is connected to the leads for performing electrical functions with respect to the electrodes.

